DOCUMENT RESUME

ED 289 833 SP 029 681

AUTHOR Hill, Susan T.; And Others
TITLE Profile of Education Doctorates: 1976 to 1986.
INSTITUTION Center for Education Statistics (OERI/ED), Washington, DC.
REPORT NO CS-87-385
PUB DATE 87
NOTE 43p.
PUB TYPE Statistical Data (110) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Career Choice; Comparative Analysis; *Doctoral Degrees; *Education Majors; Marital Status; National Norms; *Student Characteristics

ABSTRACT

This report presents trend data from 1976 to 1986 on the number, demographic characteristics, and fields of specialization of education doctorate recipients. Intended users include education program planners, education policy analysts, and education administrators. Charts and text also present information regarding institutions awarding education doctorates, race and sex of doctorate recipients, marital status and age of recipients, planned employment after graduation, and comparisons between education doctorate recipients and other doctorate recipients. Data were derived from the Degrees and Other Formal Awards Conferred survey and the Survey of Earned Doctorates. (CB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED289833

SP 029 681

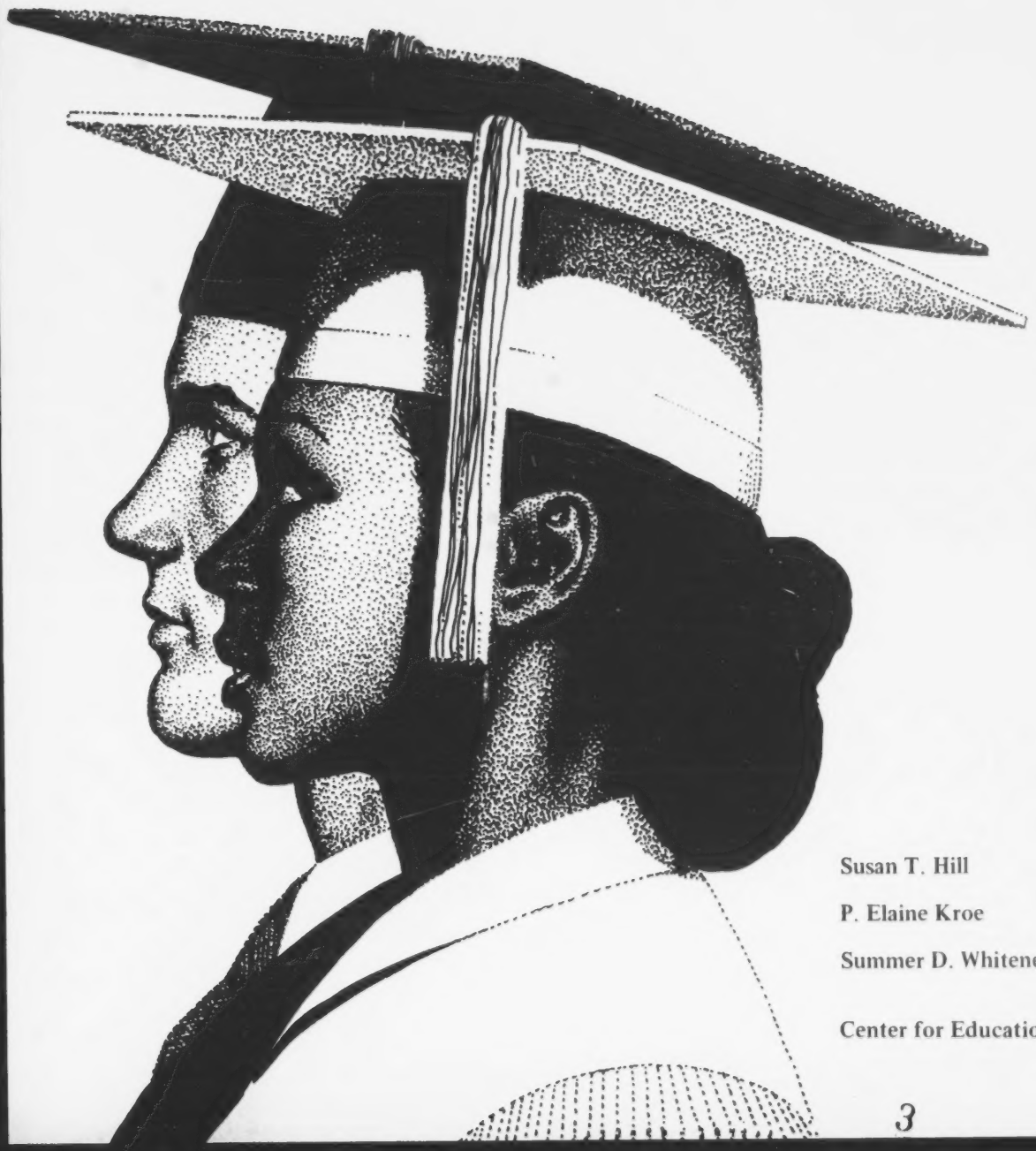
U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Profile of Education Doctorates: 1976 to 1986



Susan T. Hill

P. Elaine Kroe

Summer D. Whitener

Center for Education Statistics

U.S. Department of Education
William J. Bennett
Secretary

Office of Educational Research and Improvement
Chester E. Finn, Jr.
Assistant Secretary

Center for Education Statistics
Emerson J. Elliott
Director

Information Services
Ray Fields
Director

Center for Education Statistics

"The purpose of the Center shall be to collect and disseminate statistics and other data related to education in the United States and in other nations. The Center shall . . . collect, collate, and from time to time, report full and complete statistics on the conditions of education in the United States; conduct and publish reports on specialized analyses of the meaning and significance of such statistics; . . . and review and report on education activities in foreign countries,"—Section 406(b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e-1).

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

Foreword

This report provides trend data on the number, demographic characteristics, and field of specialization of education doctorate recipients. These graduates play important leadership roles in the Nation's educational enterprise, becoming principals, superintendents, teacher trainers, and key administrators in State and local educational agencies. Therefore, this report provides a valuable statistical review for a wide range of data users, such as education program planners, education policy analysts, and education administrators.

The data in this report were derived from two annual Federal surveys: (1) the Degrees and Other Formal Awards Conferred survey, conducted by the Center for Education Statistics, and (2) the Survey of Earned Doctorates, sponsored jointly by the U.S. Department of Education and other Federal agencies and conducted by the National Research Council.

Samuel S. Peng
Director
Postsecondary Education
Statistics Division
Center for Education Statistics

Martin M. Frankel
Chief
General Surveys and Analysis
Branch
Center for Education Statistics

Acknowledgments

The authors wish to thank Aurora D' Amico for her assistance in the preparation of the literature review and the graphics, and her review of the manuscript for quality control. This report was prepared under the guidance of Martin Frankel, William Freund, and Samuel Peng in the Postsecondary Education Statistics Division.

The authors are grateful to the following peer reviewers who improved the report in many respects:

Felix H. Lindsay, National Science Foundation
Peter D. Syverson, Council of Graduate Schools in U.S.
Chuck Cowan, Center for Education Statistics
Paula Knepper, Center for Education Statistics
Gayle Thompson Rogers, Center for Education Statistics
Susan L. Coyle, National Research Council

As users of data, we are indebted to all the individuals who completed the survey forms and thus provided the information that made this report possible.

Contents

Page

Foreword iii

Acknowledgments iv

Introduction 1

Number of Education Doctorates

Education doctorates vs. total doctorates, 1966-86 2
Fields of specialization in education, 1976-86 6
  Teaching fields 7
  Top gains and losses of awards 8
  Representation in education fields, by sex 8
Institutions awarding education doctorates 10

Characteristics of Education Doctorate Recipients, 1976-86

Profile of U.S. citizens, by race/ethnicity and sex 14
Foreign students earning U.S. education doctorates 17
Marital status and age 19
Planned employment after graduation 19

Appendix

Tables 22
Survey methodology 29
For more information 30

Page

Text Tables

1. Top-ranking doctoral fields in 1966 and 1986..... 2

2. Total doctorates and education doctorates, and education as a percent of total, in institutions of higher education, by sex of recipient: 1966-1986..... 4

3. Top-ranking fields in education doctorates: 1976 and 1986..... 6

4. Top-ranking teaching fields in education doctorates: 1976 and 1986..... 7

5. Top 50 institutions in the number of education doctorates, by State and control, by number of education and total doctorates, and by percent of doctorates in education: 1986..... 11

6. Number of institutions awarding education doctorates, and number of education doctorates, by region and State: 1986..... 12

7. Sex and racial/ethnic representation among education doctorate recipients (U.S. citizens) in 1976 and 1986 and among the U.S. population in 1980..... 15

8. Number of education doctorate recipients (U.S. citizens), by race/ethnicity and sex: 1982-86..... 16

9. Top 20 countries in number of U.S. education doctorates earned by non-U.S. citizens: 1985..... 18

Figures

1. Doctorates in education, by sex: 1966-1986..... 5

2. Education specialties in which men earned over half of the doctorates: 1986..... 9

3. Percent of education doctorate recipients planning to teach or to go into administration, by sex: 1976 and 1985..... 20

Appendix Tables

A. Education doctorates conferred in institutions of higher education, by field of study and sex of recipient: 1976-86.... 22

B. Education doctorates to women as a percent of total education doctorates, by field of study: 1976-86..... 26

C. Statistical profile of education doctorate recipients, by sex: 1976, 1981, and 1985..... 27

D. Statistical profile of total doctorate recipients, by sex: 1976, 1981, and 1985..... 28

Introduction

Persons who earn education doctorates play an important role in the education system in this country--as administrators of elementary/secondary schools and postsecondary institutions, and as college and university faculty who "train the teachers," conduct research on teaching and learning, and develop curriculums. However, the field of education at the doctoral level has received little attention in published reports. This report fills that information gap by presenting data on education doctorate awards and characteristics of education doctorate recipients from 1976 to 1986, with contextual information back to 1966.[1]

This special report is based on data from two annual Federal surveys. The Degrees and Other Formal Awards Conferred survey of all institutions of higher education was used as the best source to describe the number of awards (total doctorates and education doctorates). The Survey of Earned Doctorates, completed by all persons receiving doctor's degrees, was used as the best source to describe the characteristics of the recipients and their fields of specialization.[2] (See the appendix for more information.)

Education has been the most popular field of choice for doctoral study since 1966, accounting for over one out of five doctoral degrees in 1986. The number of awards increased from 3,060 degrees in 1966 to a high point of 7,960 degrees in 1977.[3] It has declined since then, due primarily to fewer men entering the field, and by 1986 hit a 14-year low of 7,110. Even with these declines, education was still the most popular field of doctoral study in 1986.

The characteristics of education doctorate recipients have changed considerably in the last decade and have come closer to reflecting the characteristics of the U.S. population. Women now account for over half of all graduates, and there have been increasing numbers of minority graduates (with the exception of black graduates, whose numbers have been declining in recent years). More foreign students are studying for education doctorates, to a point where foreign graduates almost equal the combined number of all U.S. minorities earning education doctorates.

Education doctorate recipients are going more into administration and less into teaching fields. Fewer plan to work in education institutions, and more plan to work for business and industry.

---

[1]For simplicity, academic years are referred to by the year in which they end. For example, academic year 1965-66 is referred to as 1966.

[2]The data for total education doctorates differ slightly between the two surveys because of different respondents and data collection methodologies.

[3]Numbers are rounded to the nearest 10 in the text unless it would obscure meaningful differences. All calculations in this report are performed on actual, not rounded, figures.

Number of Education Doctorates

Education Doctorates vs. Total Doctorates, 1966-86

Since 1966, more doctorates have been conferred in education than in any other major field of study.[4] The 3,060 education doctorates awarded in 1966 exceeded doctoral awards in the second largest field--physical sciences--by less than 20 awards (table 1). However, by 1986, the number of education doctorates had more than doubled and had exceeded physical sciences doctorates, still in second place, by 3,560 awards.

Note: Data for this section are from the Degrees and Other Formal Awards Conferred surveys, 1966 through 1986.

[4]National Academy of Sciences, A Century of Doctorates, Data Analyses of Growth and Change. Washington, D.C., Printing and Publishing Office, National Academy of Sciences, 1978, pp. 12-13.

Table 1.--Top-ranking doctoral fields in 1966 and 1986

Field of study	Fields in 1966		Field of study	Fields in 1986	
	Number of awards	Rank		Number of awards	Rank
Total	18,239	-	Total	33,653	-
Education	3,063	1	Education	7,110	1
Physical sciences	3,045	2	Physical sciences	3,551	2
Engineering	2,304	3	Engineering	3,400	3
Social sciences	2,158	4	Life sciences	3,358	4
Life sciences*	2,097	5	Psychology	3,088	5
Psychology	1,046	6	Social sciences	2,955	6
Other fields	4,526	-	Other fields	10,191	-

- Not applicable.

*This field was called biological sciences on the survey forms before 1983.

SOURCE: U.S. Department of Education, Center for Education Statistics, Degrees and Other Formal Awards Conferred surveys, 1966 and 1986.

During the 1966-77 period, the number of education doctorates grew much faster than total doctorates, which peaked in 1973 and then stabilized. The field of education peaked in doctoral awards in 1977 (7,960 doctorates) and captured its greatest share of all doctorates in 1980 (24.3 percent) (table 2). Awards of education doctorates fluctuated briefly after peaking in 1977 and began a steady decline after 1980. By 1986, education doctorates were at a 14-year low of 7,110 awards, and their share of total doctorates was down to 21 percent. Education was second only to humanities in loss of total awards and rate of decline over the 1976-86 period.[5] Even with these declines, education was still the largest doctoral field.

The number of education doctorates earned by men rose annually from 1966 to 1973, when it peaked at 5,500 (table 2). The number then fluctuated before beginning a steady decline in 1978. Women earned education doctorates in steadily increasing numbers from 1966 to 1981, though the numbers have stabilized since then.

Over the 1976-86 period, education doctorates awarded to men and women followed strongly divergent paths: awards to women increased 46 percent, and awards to men decreased by 36 percent (table 2 and figure 1). Although men dominated doctoral awards in education in 1976, accounting for two-thirds of the total, their share of awards has declined annually since 1970. In 1983, for the first time, women earned more education doctorates than men. Since then, women's share of education doctorates has increased slightly every year, and reached 53 percent in 1986. However, the number of such awards earned by women has stabilized since 1981. Given the stability in doctoral awards in education earned by women and the fact that these awards to men have declined steadily, it is likely that the field of education will continue to decline as a choice for doctoral study.

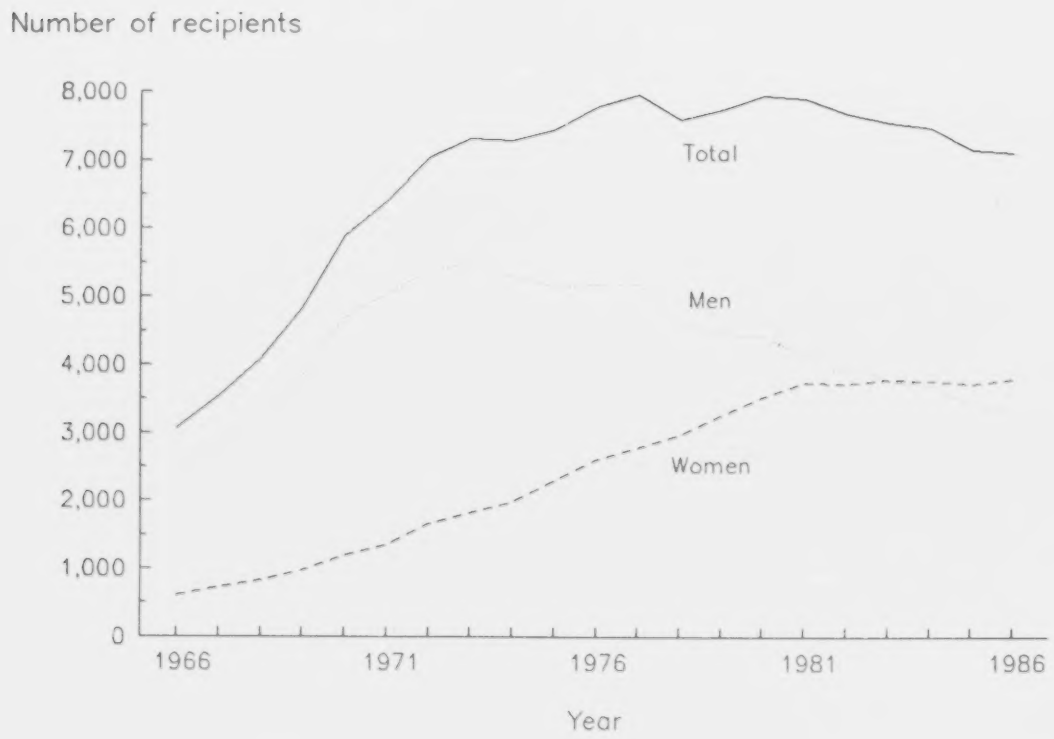
[5]National Research Council, Summary Report 1985, Doctorate Recipients from United States Universities, National Academy Press, Washington, D.C., 1986, p. 3; and unpublished data from the National Research Council's 1986 Survey of Earned Doctorates.

Table 2.--Total doctorates and education doctorates, and education as a percent of total, in institutions of higher education, by sex of recipient: 1966-86

Academic year	Total doctorates			Education doctorates			Education as a percent of total		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
1966	18,237	16,121	2,116	3,063	2,461	602	16.8	15.3	28.4
1967	20,617	18,163	2,454	3,529	2,807	722	17.1	15.5	29.4
1968	23,089	20,183	2,906	4,079	3,249	830	17.7	16.1	28.6
1969	26,188	22,752	3,436	4,829	3,859	970	18.4	17.0	28.2
1970	29,866	25,890	3,976	5,894	4,698	1,196	19.7	18.1	30.1
1971	32,107	27,530	4,577	6,403	5,045	1,358	19.9	18.3	29.7
1972	33,363	28,090	5,273	7,044	5,384	1,660	21.1	19.2	31.5
1973	34,777	28,571	6,206	7,318	5,504	1,814	21.0	19.3	29.2
1974	33,816	27,365	6,451	7,293	5,316	1,977	21.6	19.4	30.6
1975	34,083	26,817	7,266	7,446	5,147	2,299	21.8	19.2	31.6
1976	34,064	26,267	7,797	7,778	5,179	2,599	22.8	19.7	33.3
1977	33,232	25,142	8,090	7,963	5,189	2,774	24.0	20.6	34.3
1978	32,131	23,658	8,473	7,595	4,634	2,961	23.6	19.6	34.9
1979	32,730	23,541	9,189	7,736	4,472	3,264	23.6	19.0	35.5
1980	32,615	22,943	9,672	7,941	4,419	3,522	24.3	19.3	36.4
1981	32,958	22,711	10,247	7,900	4,164	3,736	24.0	18.3	36.5
1982	32,707	22,224	10,483	7,680	3,950	3,730	23.5	17.8	35.6
1983	32,775	21,902	10,873	7,551	3,764	3,787	23.0	17.2	34.8
1984	33,209	22,064	11,145	7,473	3,703	3,770	22.5	16.8	33.8
1985	32,943	21,700	11,243	7,151	3,419	3,732	21.7	15.8	33.2
1986	33,633	21,819	11,834	7,110	3,315	3,795	21.1	15.2	32.1

SOURCE: U.S. Department of Education, Center for Education Statistics, Degrees and Other Formal Awards Conferred surveys, 1966-86.

Figure 1.--Doctorates in education, by sex: 1966-86



SOURCE: U.S. Department of Education, Center for Education Statistics, Degrees and Other Formal Awards Conferred surveys, 1966-86.

Fields of Specialization in Education, 1976-86

The top five fields in the number of education doctorates awarded were identical in 1976 and 1986 (table 3). Education administration and supervision was the largest field of specialization by far, awarding over twice as many doctorates as the next largest field, curriculum and instruction. Student counseling, personnel services dropped to the bottom of the top five fields.

Education doctorates can be classified into non-teaching and teaching fields of specialization (appendix table A). No teaching fields appeared among the top five education fields in 1976 or 1986. Education doctorates awarded in non-teaching fields outnumbered those in teaching fields about 4 to 1 throughout the 1976-86 period. Of the two major classifications, teaching doctorates declined more rapidly during this period--20 percent vs. 15 percent for non-teaching doctorates.

Note: Data for this section are from the Survey of Earned Doctorates, 1976-86. The fields of "other" education and "general" education are excluded from analysis in this section (pp. 6 to 9) because of their indefinite content, unless otherwise stated.

Table 3.--Top-ranking fields in education doctorates: 1976 and 1986

Education specialty	Fields in 1976	
	Number of awards	Rank
Total	7,727	-
Education administration and supervision	1,674	1
Curriculum and instruction	786	2
Student counseling, personnel services	693	3
Higher education	649	4
Educational psychology*	490	5
Other fields	3,435	-

Education specialty	Fields in 1986	
	Number of awards	Rank
Total	6,602	-
Education administration and supervision	1,622	1
Curriculum and instruction	787	2
Higher education	609	3
Educational psychology*	323	4
Student counseling, personnel services	315	5
Other fields	2,946	-

- Not applicable.

*Some of the decline in awards in this field from 1976-86 occurred because a new category, school psychology, was added to the survey form in 1983, and it captured some awards formerly classified under educational psychology.

Note: Data include one institution in Puerto Rico.

SOURCE: U.S. Department of Education, Center for Education Statistics, and the National Research Council, Survey of Earned Doctorates, 1976 and 1986.

Teaching Fields

Education doctorates in teaching fields comprised less than one out of five education doctorates throughout the 1976-86 period (appendix table A).[6] Changes in the top five teaching fields between 1976 and 1986 are shown in table 4. Physical education retained its position as the most popular teaching field, awarding over twice as many doctorates in 1986 as the next largest field--reading education. Reading education was the only teaching field among the top five to show a net increase in doctoral awards over the 11-year period. Science education was replaced among the top five by English education.

[6]The fields of "other" education and "general" education are included in the count of total education doctorates.

Table 4.--Top-ranking teaching fields in education doctorates: 1976 and 1986

Education specialty	Fields in 1976		Education specialty	Fields in 1986	
	Number of awards	Rank		Number of awards	Rank
Total	1,418	-	Total	1,141	-
Physical education, health and recreation	337	1	Physical education, health and recreation	291	1
Trade and industrial education	174	2	Reading education	134	2
Reading education	112	3	Music education	94	3
Science education	106	4	Trade and industrial education	86	4
Music education	99	5	English education	79	5
Other teaching fields	590	-	Other teaching fields	457	-

Note: Data include one institution in Puerto Rico.

SOURCE: U.S. Department of Education, Center for Education Statistics, and the National Research Council, Survey of Earned Doctorates, 1976 and 1986.

Top Gains and Losses of Awards

Absolute gains in education doctorates from 1976 to 1986 occurred in only 6 fields of specialization--curriculum and instruction, education measures and statistics, adult and continuing education, agricultural education, reading education, and foreign languages (appendix table A). All six fields together had a net growth of only 70 doctorates. These negligible gains underscore the waning popularity of the education field as a whole for doctoral study.

The largest loss in education doctorates occurred in the field of student counseling, personnel services, which declined by 380 awards from 1976-86. Educational psychology was the second largest loser, dropping by 170 awards. Together, the two fields accounted for almost half of the total decline in education doctorates over the 11-year period.

Among the teaching disciplines, trade and industrial education decreased the most, losing almost 90 awards, and physical education, health, and recreation (50 doctorates) and science education (40 doctorates) were the second and third largest losers.

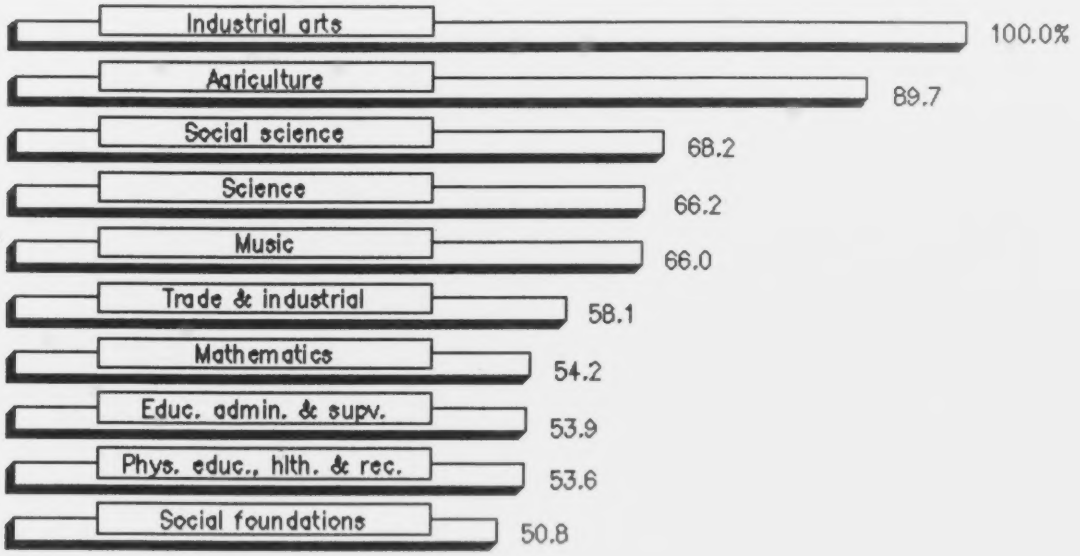
Representation in Education Fields, by Sex

The number of education fields in which women received the majority of doctoral awards more than tripled in 1976-86 (appendix tables A and B).[7] By 1986, men dominated only 10 fields of specialization (figure 2), almost three-fourths of which were teaching fields.[8] The number of awards to women increased sizeably in only two of the male-dominated fields: education administration and supervision, and physical education, health, and recreation (appendix table A). In the other fields, women either lost ground or made negligible gains. Nevertheless, women increased their proportional representation in most male-dominated fields over the decade, primarily because the number of education doctorates awarded to men dropped.

[7]Some of this increase is due to newly created fields in which women predominate.

[8]The field of junior high education was excluded, as only one doctorate was granted in this field in 1986.

Figure 2.--Education specialties in which men earned over half of the doctorates: 1986



SOURCE: U.S. Department of Education, Center for Education Statistics, and the National Research Council, Survey of Earned Doctorates, 1986.

Institutions Awarding Education Doctorates

The number of institutions that award education doctorates has grown since 1976, when 157 universities offered this degree. In 1986, 194 institutions granted education doctorates out of 438 doctoral-granting institutions in the 50 States and the District of Columbia.

The top 50 institutions awarding education doctorates in 1986 accounted for almost two-thirds of all education doctorates awarded that year. The number of education doctorates awarded by each of these institutions (table 5) ranged between 50 and 170 degrees. Three-fourths of these institutions were public; the remaining were private. The top two institutions awarding education doctorates were both from the State of Pennsylvania--Temple University and the University of Pittsburgh. Columbia Teachers College, the only teacher's college among the top 50, ranked third on the list. Education doctorates accounted for a large proportion of the total doctorates awarded at these institutions.

In 1986, California had the largest number of institutions awarding education doctorates (17), and it also ranked first in total awards (523). Pennsylvania (518) and New York (502) ranked second and third, respectively. In three States--Alaska, New Hampshire, and Rhode Island--no institutions awarded education doctorates in 1986 (table 6).

Note: Data for this section are from the Degrees and Other Formal Awards Conferred surveys, 1976 and 1986.

Table 5.--Top 50 institutions in the number of education doctorates, by State and control, by number of education and total doctorates, and by percent of doctorates in education: 1986

Rank	Institution	State	Control	Number of education doctorates	Number of total doctorates	Percent of doctorates in education
	Total, top 50	--	--	4,427	14,263	31.0
1	Temple University*	Pennsylvania	Public	171	277	61.7
2	University of Pittsburgh--Main Campus*	Pennsylvania	Public	165	390	42.3
3	Columbia University-Teachers College*	New York	Private	163	226	72.1
3	Nova University*	Florida	Private	163	263	62.0
5	Vanderbilt University	Tennessee	Private	149	259	57.5
6	Michigan State University*	Michigan	Public	139	438	31.7
7	University of Georgia*	Georgia	Public	129	309	41.7
8	University of Texas--Austin*	Texas	Public	125	545	22.9
9	University of Maryland--College Park*	Maryland	Public	124	370	33.5
10	University of Massachusetts--Amherst*	Massachusetts	Public	112	290	38.6
11	University of Southern California*	California	Private	111	363	30.6
12	Ohio State University--Main Campus*	Ohio	Public	109	512	21.3
13	University of Wisconsin--Madison*	Wisconsin	Public	104	606	17.2
14	Indiana University--Bloomington*	Indiana	Public	99	353	28.0
15	University of Illinois--Urbana*	Illinois	Public	96	560	17.1
15	University of Minnesota--Minneapolis St. Paul*	Minnesota	Public	96	556	17.3
17	Florida State University*	Florida	Public	91	224	40.6
18	Pennsylvania State University--Main Campus*	Pennsylvania	Public	90	350	25.7
18	Rutgers University--New Brunswick*	New Jersey	Public	90	320	28.1
20	University of Michigan--Ann Arbor*	Michigan	Public	88	598	14.7
21	Brigham Young University--Main Campus*	Utah	Private	86	123	69.9
21	Oklahoma State University--Main Campus*	Oklahoma	Public	86	224	38.4
21	Southern Illinois University--Carbondale*	Illinois	Public	86	170	50.6
24	Texas A&M University--Main Campus*	Texas	Public	82	336	24.4
25	University of Missouri--Columbia*	Missouri	Public	81	202	40.1
25	University of Oregon*	Oregon	Public	81	197	41.1
27	Harvard University*	Massachusetts	Private	76	452	16.8
27	University of Iowa*	Iowa	Public	76	258	29.5
29	Virginia Polytechnic Institute & State Univ*	Virginia	Public	74	274	27.0
30	North Texas State University	Texas	Public	73	153	47.7
31	United States International University	California	Private	70	157	44.6
32	Ball State University	Indiana	Public	69	95	72.6
32	Boston University*	Massachusetts	Private	69	307	22.5
32	University of Florida*	Florida	Public	69	290	23.8
35	University of Nebraska--Lincoln*	Nebraska	Public	68	201	33.8
36	University of Alabama*	Alabama	Public	66	121	54.5
37	Arizona State University*	Arizona	Public	62	157	39.5
38	East Texas State University*	Texas	Public	61	68	89.7
39	University of Pennsylvania	Pennsylvania	Private	60	341	17.6
39	University of South Carolina--Columbia*	South Carolina	Public	60	168	35.7
41	University of Houston--University Park	Texas	Public	59	169	34.9
41	New York University*	New York	Private	58	377	15.4
43	Northern Illinois University*	Illinois	Public	58	78	74.4
44	SUNY at Buffalo--Main Campus	New York	Public	57	206	27.7
45	University of California--Los Angeles*	California	Public	56	433	12.9
46	University of Connecticut*	Connecticut	Public	54	174	31.0
46	Georgia State University	Georgia	Public	54	96	56.3
46	George Washington University	Washington, D.C.	Private	54	199	27.1
46	University of Kansas--Main Campus	Kansas	Public	54	211	25.6
46	University of Virginia--Main Campus*	Virginia	Public	54	217	24.9

-- Not applicable.
*Institutions also in the top 50 in 1976.

SOURCE: U.S. Department of Education, Center for Education Statistics, Degrees and Other Formal Awards Conferred survey, 1986.

Table 6.--Number of institutions awarding education doctorates, and number of education doctorates, by region and State: 1986

Region and State	Number of institutions awarding education doctorates	Number of education doctorates
50 States and D.C. . .	194	7,110
New England.	12	382
Connecticut.	3	62
Maine.	1	7
Massachusetts.	7	308
New Hampshire.	0	0
Rhode Island	0	0
Vermont.	1	5
Mideast.	34	1,367
Delaware	1	10
District of Columbia .	5	100
Maryland	3	133
New Jersey	3	104
New York	14	502
Pennsylvania	8	518
Southeast.	44	1,552
Alabama.	3	99
Arkansas	1	30
Florida.	9	399
Georgia.	3	215
Kentucky	1	19
Louisiana.	4	33
Mississippi.	4	112
North Carolina	4	111
South Carolina	4	81
Tennessee.	6	258
Virginia	4	150
West Virginia.	1	45
Great Lakes.	32	1,335
Illinois	9	350
Indiana.	4	196
Michigan	6	314
Ohio	10	340
Wisconsin.	3	135

Table 6.--Number of institutions awarding education doctorates, and number of education doctorates, by region and State: 1986
-Continued

Region and State	Number of institutions awarding education doctorates	Number of education doctorates
Plains	15	619
Iowa	3	140
Kansas	2	97
Minnesota	1	96
Missouri	6	168
Nebraska	1	68
North Dakota	1	10
South Dakota	1	40
Southwest	18	802
Arizona	3	143
New Mexico	2	60
Oklahoma	3	139
Texas	10	460
Rocky Mountains	12	309
Colorado	4	115
Idaho	2	16
Montana	2	16
Utah	3	134
Wyoming	1	28
Far West	27	744
Alaska	0	0
California	17	523
Hawaii	1	7
Nevada	2	11
Oregon	3	112
Washington	4	91

SOURCE: U.S. Department of Education, Center for Education Statistics, Degrees and Other Formal Awards Conferred survey, 1986.

Characteristics of Education Doctorate Recipients, 1976-86

Profile of U.S. Citizens, by Race/Ethnicity and Sex

Historically, white men have dominated doctoral study in education, although this field has attracted more women and minorities than other major fields of study.[9] White males accounted for 60 percent of education doctorates in 1976, and by 1986 accounted for 38 percent. There were large decreases in the numbers of white men earning education doctorates (from 4,110 in 1976 to 2,110 in 1986). Women and minorities became the majority of education doctorates primarily because of these declines and the numerical increases in women earning education doctorates.

Compared with their representation in the population, women were overrepresented among education doctorates, while most minority groups were still underrepresented in 1986 (table 7). Minorities have not made major gains in recent years, and blacks have had significant declines (table 8).

From 1982 to 1986, the number of black education doctorates declined 26 percent; this decline was even greater than the 9 percent decline for the white majority group. The decline in blacks as a group was primarily the result of a precipitous decline of 40 percent in the number of black men earning education doctorates from 1982 to 1986, a decline twice that of white men (20 percent). The loss of black men in education, once the field in which most earned their degrees, has not been counter-balanced by increases in other fields,[10] nor by increases in black women earning education doctorates (table 8). This decline in the number of blacks earning doctorates, especially of men, is not limited to education; it has also occurred to a lesser extent at other degree levels.[11]

In the same time period, the number of education awards to Hispanic men also declined. However, increases in awards to Hispanic women counterbalanced this drop, so no net losses occurred for this group as a whole. Since 1983, Hispanic women have earned more education doctorates than Hispanic men (with the exception of Mexican-American degree recipients until 1986) (table 8).

Note: Data for this section are from the Survey of Earned Doctorates. Data were not available for all years for all variables discussed in this section, so time periods discussed vary.

[9]A large percentage of women and minority doctorates (with the exception of Asians) earn their degrees in the field of education. See National Research Council, Summary Report 1985, pp. 16 and 18.

[10]The decline for black male doctorates from 1982 to 1986 was much greater in the field of education (40 percent) than in other fields (16 percent). Calculated from data on pp. 13 and 15 of the Summary Report 1985, and from unpublished 1986 data.

[11]"Blacks in Higher Education: The Climb Toward Equality", Change: The Magazine of Higher Learning, May/June 1987, p. 7.

Table 7.--Sex and racial/ethnic representation among education doctorate recipients (U.S. citizens) in 1976 and 1986 and among the U.S. population in 1980

Sex and race/ethnicity	Education doctorate recipients (U.S. citizens)*				Percent of U.S. population (1980 Census)
	Number		Percent		
	1976	1986	1976	1986	
Total	7,115	5,595	100.0	100.0	100.0
Men	4,757	2,403	66.9	42.9	48.6
Women	2,358	3,192	33.1	57.1	51.4
White, non-Hispanic	6,041	4,820	84.9	86.1	80.2
Black, non-Hispanic	674	421	9.5	7.5	11.7
Hispanic	121	188	1.7	3.4	6.4
Asian or Pacific Islander	37	58	0.5	1.0	1.6
American Indian or Alaskan Native	53	26	0.7	0.5	0.7
Other and unknown	189	82	2.7	1.5	--

-- Not available.

* Excludes non-U.S. citizens who earned education doctorates. See later section of report for a discussion of these doctorates.

Note.--Percents may not add to 100 due to rounding. Data include one institution in Puerto Rico.

SOURCE: U.S. Department of Education, Center for Education Statistics, and the National Research Council, Survey of Earned Doctorates, 1976 and 1986. Data on U.S. population from: U.S. Department of Commerce, Bureau of the Census, We, The Americans. Washington, D.C. U.S. Government Printing Office, 1984, p. 8.

Table 8.--Number of education doctorate recipients (U.S. citizens), by race/ethnicity and sex: 1982-86

Race/ethnicity and sex	1982	1983	1984	1985	1986
Total (U.S. citizens)	6,257	6,223	5,886	5,744	5,595
Men	3,081	2,933	2,747	2,618	2,403
Women	3,176	3,290	3,139	3,126	3,192
White, non-Hispanic	5,300	5,333	5,064	4,905	4,820
Men	2,656	2,544	2,400	2,310	2,114
Women	2,644	2,789	2,664	2,595	2,706
Black, non-Hispanic	572	490	483	475	421
Men	233	196	191	157	141
Women	339	294	292	318	280
American Indian or Alaskan Native	29	44	32	39	26
Men	13	21	19	12	16
Women	16	23	13	27	10
Asian or Pacific Islander	69	73	60	69	58
Men	24	33	27	24	25
Women	45	40	33	45	33
Hispanic, total	175	180	145	180	188
Men	108	89	61	82	68
Women	67	91	84	98	120
Puerto Rican	44	47	37	57	45
Men	26	19	14	24	20
Women	18	28	23	33	25
Mexican-American	77	82	67	71	79
Men	45	47	33	42	31
Women	32	35	34	29	48
Other Hispanic	54	51	41	52	64
Men	37	23	14	16	17
Women	17	28	27	36	47
Other and unknown	112	103	102	76	82
Men	47	50	49	33	39
Women	65	53	53	43	43

Note: Data before 1982 are not shown because the definitions for race/ethnicity were changed in the earlier years. Data include one institution in Puerto Rico.

SOURCE: U.S. Department of Education, Center for Education Statistics, and the National Research Council, Survey of Earned Doctorates, 1982-86, unpublished tabulations.

Foreign Students Earning U.S. Education Doctorates

Doctoral education offered by U.S. universities has been drawing increasing numbers of students from foreign countries. Most of these students enroll in technological fields that are relatively "culture-free," such as science and engineering.[12] Although the field of education has not drawn large numbers of foreign students, their numbers have increased steadily since 1976, from 460 to 700 in 1985. During this period, foreign students climbed from 6 percent to over 10 percent of all education doctorate recipients (appendix table C). The 1985 figure is significant in that it approaches the proportion of education doctorates earned by all U.S. minority students combined.

In 1985, most foreign education doctorate recipients were men (69 percent), most of whom were on temporary visas (82 percent). After earning their doctorates, about half planned to leave the U.S. (52 percent) to work in a foreign university or government. While foreign recipients of U.S. education doctorates came from all over the world, 36 percent came from Asia.[13] Twenty countries accounted for two-thirds of all foreign students earning education doctorates in the U.S. in 1985 (table 9).

[12]National Science Foundation, Foreign Citizens in U.S. Science and Engineering: History, Status, and Outlook (NSF 86-305), Washington, D.C., 1985, p. 7. In one technological field, engineering, non-U.S. citizens accounted for 60 percent of the doctoral degrees awarded in 1986 according to unpublished tabulations of the 1986 Survey of Earned Doctorates.

[13]National Research Council, Summary Report 1985, p. 8.

Table 9.--Top 20 countries in number of U.S. education doctorates earned by non-U.S. citizens: 1985

Country of citizenship	Number of education doctorates
Total, top 20	471
Nigeria	67
Canada	57
Thailand (Siam)	51
Iran	34
Saudi Arabia	30
Taiwan	28
Australia	24
Jordan	23
England	20
Venezuela	20
Brazil	17
Malaysia	17
Egypt	14
Indonesia	12
Mexico	12
India	11
Iraq	10
South Africa	9
Philippines	8
Republic of Korea	7

Note: Citizens from the top 20 countries accounted for 67.5 percent of the total non-U.S. citizens who earned education doctorates (698) in 1985.

SOURCE: U.S. Department of Education, Center for Education Statistics, and the National Research Council, Survey of Earned Doctorates, 1985, unpublished tabulations.

Marital Status and Age

In the decade from 1976 to 1985, the proportion of education doctorate recipients who were married when they earned their degrees declined among men and increased slightly among women. Still, in 1985, the proportion of male education doctorate recipients who were married (77 percent) was considerably higher than women (57 percent) (appendix table C).

The median age at which recipients received their degrees increased during the decade from 37 to 39 years. Women recipients were slightly older (39 years) than men (38 years) when they earned their degrees, although both were registered for graduate work for a similar amount of time (almost 8 years) (appendix table C).

Education doctorate recipients have been about 3 years older (median age) than all doctorate recipients throughout the decade. For men, one year of this age difference was accounted for by additional registered time, and the remainder by time in which they were not registered for graduate work. Women who pursued education doctorates were registered for graduate work about the same amount of time as women pursuing doctorates in other fields, so the difference in age is accounted for by time in which they were not registered for graduate work. It is likely that many persons who earned an education doctorate were employed full-time during this period. From the time they earned their bachelor's degrees, a median time lapse of 15 years occurred until they earned their education doctorates; only 10 years elapsed for all doctorates (appendix tables C and D).

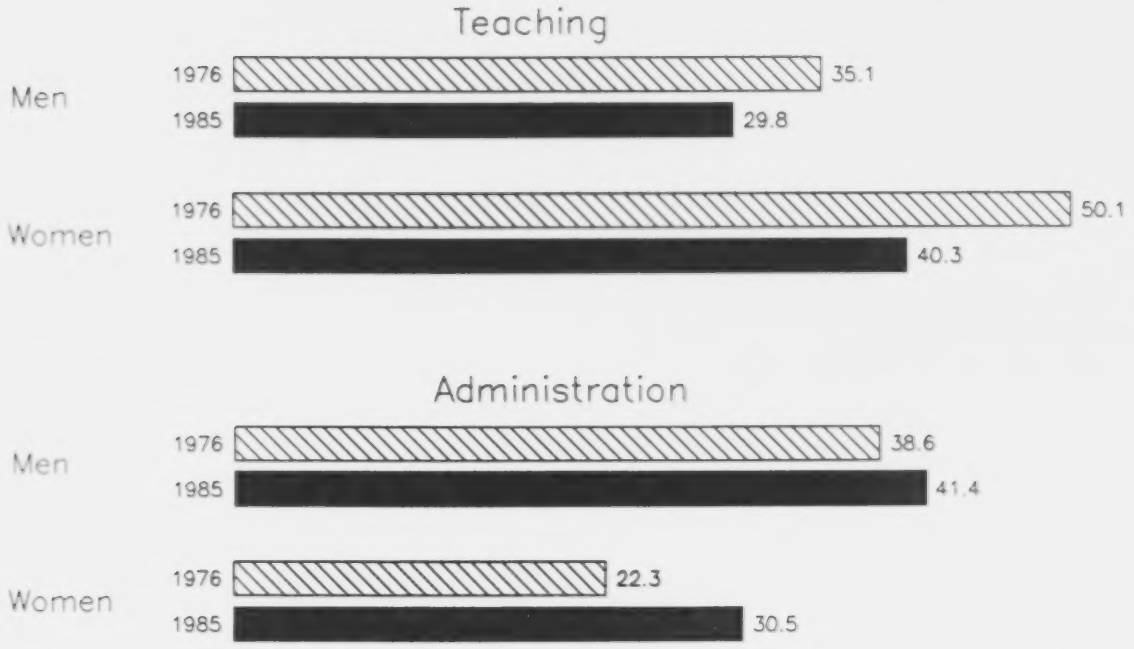
Planned Employment after Graduation

At the completion of their education doctorate, most graduates had definite employment plans (66 percent) or were seeking employment (23 percent) (appendix table C). Only 4 percent of 1985 recipients planned to do postdoctoral study.

Compared with a decade earlier, a smaller proportion of education doctorate recipients planned to work in education institutions--72 percent in 1976, dropping to 63 percent in 1985. A smaller proportion also planned to teach in 1985 (35 percent) than in 1976 (40 percent). More recipients planned to go into administration or professional service as their primary work activity (appendix table C), and more were working in business and industry.

These trends occurred during the decade among both men and women. But the sexes differed primarily in their choice between administration or teaching. Men more often planned to work in administration, while women have more often planned to teach, although the difference has narrowed somewhat (figure 3). In 1985, 30 percent of male recipients planned to teach and 41 percent planned to work in administration. In contrast, 40 percent of female recipients planned to teach and 30 percent to work in administration.

Figure 3.--Percent of education doctorate recipients planning to teach or to go into administration, by sex: 1976 and 1985



SOURCE: U.S. Department of Education, Center for Education Statistics, and the National Research Council, Survey of Earned Doctorates, 1976 and 1985.

Appendix

Table A.--Education doctorates conferred in institutions of higher education, by field of study and sex of recipient: 1976-86

Field of specialization	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Net change 1976-86
Education, total												
Total	7,727	7,448	7,190	7,370	7,576	7,489	7,226	7,147	6,780	6,717	6,602	-1,125
Women	2,537	2,584	2,852	3,100	3,375	3,534	3,525	3,604	3,457	3,480	3,590	+1,053
Men	5,190	4,864	4,338	4,270	4,201	3,955	3,701	3,543	3,323	3,237	3,012	-2,178
Nonteaching fields, total												
Total	5,637	5,389	5,164	5,305	5,473	5,459	5,227	5,170	4,939	4,990	4,814	-823
Women	1,744	1,813	1,974	2,134	2,396	2,549	2,533	2,601	2,504	2,608	2,621	+753
Men	3,893	3,576	3,190	3,171	3,077	2,910	2,694	2,569	2,435	2,382	2,193	-1,753
Curriculum and instruction												
Total	786	755	807	873	830	814	808	856	864	823	787	+1
Women	342	343	359	402	429	448	463	526	543	500	485	+143
Men	444	412	448	471	401	366	345	330	321	323	302	-142
Educational administration & supervision												
Total	1,674	1,510	1,453	1,488	1,529	1,653	1,464	1,619	1,554	1,605	1,622	-52
Women	306	328	365	423	509	614	540	632	618	679	748	+442
Men	1,368	1,182	1,088	1,065	1,020	1,039	924	987	936	926	874	-494
Education media												
Total	92	79	91	92	74	77	76	88	82	101	79	-13
Women	15	16	27	28	22	29	32	35	30	50	40	+25
Men	77	63	64	64	52	48	44	53	52	51	39	-38
Educational measures & statistics												
Total	103	118	97	104	89	90	94	137	161	118	104	+1
Women	34	37	38	43	33	41	39	60	73	67	63	+29
Men	69	81	59	61	56	49	55	77	88	51	41	-28
Educational statistics & research												
Total	--	--	--	--	--	--	--	86	105	74	57	--
Women	--	--	--	--	--	--	--	40	48	43	36	--
Men	--	--	--	--	--	--	--	46	57	31	21	--
Educational testing, evaluation & measures												
Total	--	--	--	--	--	--	--	51	56	44	47	--
Women	--	--	--	--	--	--	--	20	25	24	27	--
Men	--	--	--	--	--	--	--	31	31	20	20	--
Educational psychology												
Total	490	498	445	415	474	445	448	274	229	390	323	-167
Women	207	214	206	190	241	236	238	167	126	216	192	-15
Men	283	284	239	225	233	209	210	107	103	174	131	-152
School psychology												
Total	--	--	--	--	--	--	--	88	110	102	92	--
Women	--	--	--	--	--	--	--	44	58	57	55	--
Men	--	--	--	--	--	--	--	44	52	45	37	--
Social foundations												
Total	246	230	237	241	214	208	213	142	151	134	122	-124
Women	68	78	83	67	88	87	91	61	53	59	60	-8
Men	178	152	154	174	126	121	122	81	98	75	62	-116
Special education												
Total	316	324	311	316	346	313	347	349	313	270	273	-43
Women	142	147	157	177	205	195	237	229	220	185	197	+55
Men	174	177	154	139	141	118	110	120	93	85	76	-98

Table A.--Education doctorates conferred in institutions of higher education, by field of study and sex of recipient: 1976-86--Continued

Field of specialization	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Net change 1976-86
Student counseling, personnel service												
Total	693	660	561	606	593	549	539	502	390	395	315	-378
Women	219	222	240	272	266	253	256	252	188	209	165	-54
Men	474	438	321	334	327	296	283	250	202	186	150	-324
Higher education												
Total	649	713	612	681	684	671	651	632	654	586	609	-40
Women	165	205	223	262	272	279	285	304	333	288	308	+143
Men	484	508	389	419	412	392	366	328	321	298	301	-183
Pre-elementary education												
Total	--	--	--	--	72	90	77	63	54	67	84	--
Women	--	--	--	--	61	79	66	48	44	57	69	--
Men	--	--	--	--	11	11	11	15	10	10	15	--
Elementary education												
Total	218	187	217	168	163	180	149	111	97	121	94	-124
Women	138	116	149	126	112	120	100	85	63	90	71	-67
Men	80	71	68	42	51	60	49	26	34	31	23	-57
Junior high education												
Total	--	--	--	--	--	--	--	1	--	1	1	--
Women	--	--	--	--	--	--	--	0	--	0	0	--
Men	--	--	--	--	--	--	--	1	--	1	1	--
Secondary education												
Total	179	142	133	154	168	136	104	87	62	69	86	-93
Women	52	59	50	71	65	60	53	48	36	38	45	-7
Men	127	83	83	83	103	76	51	39	26	31	41	-86
Adult & continuing education												
Total	191	173	200	167	237	233	257	221	218	208	223	+32
Women	56	48	77	73	93	108	133	110	119	113	123	+67
Men	135	125	123	94	144	125	124	111	99	95	100	-35
Teaching fields, total												
Total	1,418	1,439	1,351	1,413	1,468	1,432	1,332	1,328	1,170	1,117	1,141	-277
Women	536	508	566	628	679	681	633	669	602	557	592	+56
Men	882	931	785	785	789	751	699	659	568	560	549	-333
Agricultural education												
Total	31	25	35	24	39	42	35	47	47	40	39	+8
Women	0	1	2		2	4	3	8	7	6	4	+4
Men	31	24	33	24	37	38	32	39	40	34	35	+4
Art education												
Total	59	55	48	50	45	63	55	58	41	43	43	-16
Women	29	20	28	27	21	36	34	32	21	25	24	-5
Men	30	35	20	23	24	27	21	26	20	18	19	-11
Business education												
Total	72	65	62	66	52	50	44	62	52	52	50	-22
Women	29	23	20	30	26	22	26	28	36	33	29	0
Men	43	42	42	36	26	28	18	34	16	19	21	-22
English education												
Total	93	69	80	80	74	63	67	76	72	68	79	-14
Women	59	33	50	41	43	39	38	50	50	44	53	-6
Men	34	36	30	39	31	24	29	26	22	24	26	-8

Table A.--Education doctorates conferred in institutions of higher education, by field of study and sex of recipient: 1976-86--Continued

Field of specialization	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Net change 1976-86
Foreign languages education												
Total	30	36	36	39	36	28	31	25	25	30	36	+6
Women	16	19	21	19	18	18	15	10	14	14	24	+8
Men	14	17	15	20	18	10	16	15	11	16	12	-2
Physical education, health & recreation												
Total	337	333	324	346	365	367	351	335	313	309	291	-46
Women	100	100	124	128	150	149	145	163	156	146	135	+35
Men	237	233	200	218	215	218	206	172	157	163	156	-81
Physical education												
Total	--	--	--	--	--	--	--	236	219	220	210	--
Women	--	--	--	--	--	--	--	106	88	84	80	--
Men	--	--	--	--	--	--	--	130	131	136	130	--
Health education												
Total	--	--	--	--	--	--	--	99	94	89	81	--
Women	--	--	--	--	--	--	--	57	68	62	55	--
Men	--	--	--	--	--	--	--	42	26	27	26	--
Home economics education												
Total	28	31	26	29	27	25	33	25	26	21	17	-11
Women	28	30	24	29	27	25	33	24	25	18	17	-11
Men	0	1	2	0	0	0	0	1	1	3	0	0
Industrial arts education												
Total	45	39	43	29	27	27	39	19	27	13	20	-25
Women	0	2	0	1	2	2	3	2	5	0	0	0
Men	45	37	43	28	25	25	36	17	22	13	20	-25
Mathematics education												
Total	96	98	57	85	74	62	50	62	64	65	72	-24
Women	36	34	23	34	30	25	20	40	30	32	33	-3
Men	60	64	34	51	44	37	30	22	34	33	39	-21
Music education												
Total	99	89	86	88	110	76	103	112	92	80	94	-5
Women	28	22	25	35	34	28	44	41	36	23	32	+4
Men	71	67	61	53	76	48	59	71	56	57	62	-9
Nursing education												
Total	--	--	--	--	41	23	25	17	21	21	40	--
Women	--	--	--	--	41	23	24	17	19	20	37	--
Men	--	--	--	--	0	0	1	0	2	1	3	--
Reading education												
Total	112	134	142	151	161	193	152	169	142	113	134	+22
Women	88	83	112	119	125	157	111	120	115	93	112	+24
Men	24	51	30	32	36	36	41	49	27	20	22	-2
Science education												
Total	106	128	101	93	96	107	86	78	77	88	65	-41
Women	20	32	26	23	26	36	28	25	26	39	22	+2
Men	86	96	75	70	70	71	58	53	51	49	43	-43
Social science education												
Total	54	49	46	65	50	49	29	39	21	24	22	-32
Women	11	17	12	24	22	15	11	22	10	8	7	-4
Men	43	32	34	41	28	34	18	17	11	16	15	-28

Table A.--Education doctorates conferred in institutions of higher education, by field of study and sex of recipient: 1976-86--Continued

Field of specialization	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Net change 1976-86
Speech education												
Total	25	14	20	16	10	12	12	2	10	7	5	-20
Women	7	6	9	11	9	9	8	2	7	3	3	-4
Men	18	8	11	5	1	3	4		3	4	2	-16
Trade & industrial education												
Total	174	211	199	200	229	213	191	138	117	82	86	-88
Women	51	48	58	70	95	78	78	55	33	23	36	-15
Men	123	163	141	130	134	135	113	83	84	59	50	-73
Other teaching fields												
Total	57	63	46	52	32	32	29	64	23	61	48	-9
Women	34	38	32	37	8	15	12	30	12	30	24	-10
Men	23	25	14	15	24	17	17	34	11	31	24	+1
Education, general												
Total	432	404	431	415	440	407	421	347	311	303	352	-80
Women	153	154	169	203	200	202	223	175	161	144	189	+36
Men	279	250	262	212	240	205	198	172	150	159	163	-116
Education, other*												
Total	240	216	244	237	195	191	246	302	360	307	295	+55
Women	104	109	143	135	100	102	136	159	190	171	188	+84
Men	136	107	101	102	95	89	110	143	170	136	107	-29

-- Not available.
*Fields of specialization not listed separately.

Note.--Data include one institution from Puerto Rico. The numbers on this table and text tables 1 and 2 do not match precisely because the data are from two different surveys with different methodologies. See the appendix to this report for the survey methodologies.

SOURCE: U.S. Department of Education, Center for Education Statistics, and the National Research Council, Survey of Earned Doctorates, 1976-86.

Table B.--Education doctorates to women as a percent of total education doctorates, by field of study: 1976-86

Field of specialization	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Education, total	32.8	34.7	39.7	42.1	44.5	47.2	48.8	50.4	51.0	51.8	54.4
Nonteaching fields, total	30.9	33.6	38.2	40.2	43.8	46.7	48.5	50.3	50.7	52.3	54.4
Curriculum and instruction	43.5	45.4	44.5	46.0	51.7	55.0	57.3	61.4	62.8	60.8	61.6
Educational administration & supervision	18.3	21.7	25.1	28.4	33.3	37.1	36.9	39.0	39.8	42.3	46.1
Education media	16.3	20.3	29.7	30.4	29.7	37.7	42.1	39.8	36.6	49.5	50.6
Educational measures & statistics	33.0	31.4	39.2	41.3	37.1	45.6	41.5	43.8	45.3	56.8	60.6
Educational statistics & research	--	--	--	--	--	--	--	46.5	45.7	58.1	63.2
Educational testing, evaluation & measures	--	--	--	--	--	--	--	39.2	44.6	54.5	57.4
Educational psychology	42.2	43.0	46.3	45.8	50.8	53.0	53.1	60.9	55.0	55.4	59.4
School psychology	--	--	--	--	--	--	--	50.0	52.7	55.9	59.8
Social foundations	27.6	33.9	35.0	27.8	41.1	41.8	42.7	43.0	35.1	44.0	49.2
Special education	44.9	45.4	50.5	56.0	59.2	62.3	68.3	65.6	70.3	68.5	72.2
Student counseling, personnel service	31.6	33.6	42.8	44.9	44.9	46.1	47.5	50.2	48.2	52.9	52.4
Higher education	25.4	28.8	36.4	38.5	39.8	41.6	43.8	48.1	50.9	49.1	50.6
Pre-elementary education	--	--	--	--	84.7	87.8	85.7	76.2	81.5	85.1	82.1
Elementary education	63.3	62.0	68.7	75.0	68.7	66.7	67.1	76.6	64.9	74.4	75.5
Junior high education	--	--	--	--	--	--	--	0.0	--	0.0	0.0
Secondary education	29.1	41.5	37.6	46.1	38.7	44.1	51.0	55.2	58.1	55.1	52.3
Adult & continuing education	29.3	27.7	38.5	43.7	39.2	46.4	51.8	49.8	54.6	54.3	55.2
Teaching fields, total	37.8	35.3	41.9	44.4	46.3	47.6	47.5	50.4	51.5	49.9	51.9
Agricultural education	0.0	4.0	5.7	0.0	5.1	9.5	8.6	17.0	14.9	15.0	10.3
Art education	49.2	36.4	58.3	54.0	46.7	57.1	61.8	55.2	51.2	58.1	55.8
Business education	40.3	35.4	32.3	45.5	50.0	44.0	59.1	45.2	69.2	63.5	58.0
English education	63.4	47.8	62.5	51.3	58.1	61.9	56.7	65.8	69.4	64.7	67.1
Foreign languages education	53.3	52.8	58.3	48.7	50.0	64.3	48.4	40.0	56.0	46.7	66.7
Physical education, health & recreation	29.7	30.0	38.3	37.0	41.1	40.6	41.3	48.7	49.8	47.2	46.4
Physical education	--	--	--	--	--	--	--	44.9	40.2	38.2	38.1
Health education	--	--	--	--	--	--	--	57.6	72.3	69.7	67.9
Home economics education	100.0	96.8	92.3	100.0	100.0	100.0	100.0	96.0	96.2	85.7	100.0
Industrial arts education	0.0	5.1	0.0	3.4	7.4	7.4	7.7	10.5	18.5	0.0	0.0
Mathematics education	37.5	34.7	40.4	40.0	40.5	40.3	40.0	64.5	46.9	49.2	45.8
Music education	28.3	24.7	29.1	39.8	30.9	36.8	42.7	36.6	39.1	28.8	34.0
Nursing education	--	--	--	--	100.0	100.0	96.0	100.0	90.5	95.2	92.5
Reading education	78.6	61.9	78.9	78.8	77.6	81.3	73.0	71.0	81.0	82.3	83.6
Science education	18.9	25.0	25.7	24.7	27.1	33.6	32.6	32.1	33.8	44.3	33.8
Social science education	20.4	34.7	26.1	36.9	44.0	30.6	37.9	56.4	47.6	33.3	31.8
Speech education	28.0	42.9	45.0	68.8	90.0	75.0	66.7	100.0	70.0	42.9	60.0
Trade & industrial education	29.3	22.7	29.1	35.0	41.5	36.6	40.8	39.9	28.2	28.0	41.9
Other teaching fields	59.6	60.3	69.6	71.2	25.0	46.9	41.4	46.9	52.2	49.2	50.0
Education, general	35.4	38.1	39.2	48.9	45.5	49.6	53.0	50.4	51.8	47.5	53.7
Education, other*	43.3	50.5	58.6	57.0	51.3	53.4	55.3	52.6	52.8	55.7	63.7

--Not available.
*Fields of specialization not listed separately.

Note.--Data include one institution in Puerto Rico.

SOURCE: U.S. Department of Education, Center for Education Statistics, and the National Research Council, Survey of Earned Doctorates, 1976-86.

Table C.--Statistical profile of education doctorate recipients, by sex: 1976, 1981, and 1985

Selected characteristics	Total			Men			Women		
	1976	1981	1985	1976	1981	1985	1976	1981	1985
					Number				
Total	7,727	7,489	6,717	5,190	3,955	3,237	2,537	3,534	3,480
					Percent				
Male	67.2	52.8	48.2	100.0	100.0	100.0			
Female	32.8	47.2	51.8				100.0	100.0	100.0
U.S. citizenship	91.7	87.7	85.5	91.2	84.3	80.9	92.6	91.4	89.8
Foreign citizenship	5.9	8.8	10.4	6.4	12.1	14.9	4.9	5.0	6.2
Permanent visa	--	--	1.9	--	--	2.5	--	--	1.4
Temporary visa	--	--	8.5	--	--	12.4	--	--	4.8
Citizenship unknown	2.4	3.6	4.1	2.4	3.5	4.2	2.6	3.6	4.0
Married	73.3	67.9	66.9	82.0	77.6	77.3	55.5	57.0	57.2
Not married	22.6	27.3	27.8	13.9	17.5	17.4	40.3	38.3	37.5
Unknown	4.1	4.8	5.3	4.1	4.9	5.3	4.2	4.6	5.3
					Years				
Median age at doctorate	36.7	37.3	38.7	36.4	36.8	38.2	37.4	38.0	39.3
Median time lapse from baccalaureate to doctorate									
Total time	12.6	13.5	15.1	12.5	13.0	14.6	13.0	14.2	15.7
Registered time	6.3	7.0	7.6	6.5	7.1	7.7	6.0	6.9	7.5
					Percent				
Definite postdoctoral study	1.4	1.6	2.1	1.3	1.5	2.2	1.6	1.6	2.0
Seeking postdoctoral study	1.1	1.6	1.9	1.1	1.4	1.7	1.0	1.9	2.1
Definite employment	67.7	67.6	66.5	69.7	71.2	69.6	63.5	63.6	63.6
Seeking employment	23.4	23.5	22.7	22.0	20.5	19.9	26.3	26.8	25.3
Postdoctorate status unknown	6.4	5.7	6.8	5.8	5.4	6.6	7.6	6.1	6.9
Planned employment after doctorate*									
Education institution	72.1	66.3	63.1	72.1	66.1	64.3	72.3	66.5	61.9
Industry/business	2.1	5.8	7.1	2.2	5.8	6.5	1.9	5.7	7.7
Government	9.3	10.2	10.0	10.4	11.7	10.6	6.9	8.4	9.4
Nonprofit	4.3	5.0	5.1	4.5	5.4	5.5	3.9	4.5	4.7
Other	3.3	3.9	4.0	2.6	2.7	2.6	4.8	5.2	5.3
Primary employment activity after doctorate									
Research & development	5.8	5.9	5.5	5.3	6.4	5.5	7.0	5.3	5.6
Teaching	39.7	39.1	35.0	35.1	33.9	29.8	50.1	45.6	40.3
Administration	33.6	35.2	36.0	38.6	40.0	41.4	22.3	29.3	30.5
Professional service	9.4	11.5	13.2	9.0	10.9	12.2	10.2	12.2	14.3
Other	1.4	1.8	2.4	1.2	1.7	2.4	1.9	1.9	2.4
Activity unknown	10.1	6.4	7.8	10.7	7.0	8.7	8.6	5.7	7.0

--Not available.
*This adds to the total percent of those with definite employment and seeking employment.

Note: Percents may not add to 100 due to rounding. Data include one institution in Puerto Rico. Total numbers of recipients on this table are slightly less than the total number of awards on Table 1 primarily because of nonresponse to the Survey of Earned Doctorates.

SOURCE: U.S. Department of Education, Center for Education Statistics and the National Research Council, Survey of Earned Doctorates, 1976, 1981, and 1985.

Table D.--Statistical profile of total doctorate recipients, by sex: 1976, 1981, and 1985

Selected characteristics	Total			Men			Women		
	1976	1981	1985	1976	1981	1985	1976	1981	1985
					Number				
Total	32,923	31,319	31,201	25,247	21,447	20,502	7,676	9,872	10,699
					Percent				
Male	76.7	68.5	65.7	100.0	100.0	100.0			
Female	23.3	31.5	34.3				100.0	100.0	100.0
U.S. citizenship	82.6	79.8	74.5	80.7	76.1	69.1	88.9	87.9	84.9
Foreign citizenship	15.2	16.6	20.9	17.1	20.2	26.3	9.1	8.7	10.8
Permanent visa	--	--	4.2	--	--	4.9	--	--	3.0
Temporary visa	--	--	16.7	--	--	21.4	--	--	7.8
Citizenship unknown	2.2	3.6	4.6	2.2	3.7	4.7	2.0	3.5	4.3
Married	68.2	60.1	58.3	72.2	63.7	61.8	55.0	52.2	51.6
Not married	28.1	34.7	35.6	24.0	30.9	31.9	41.7	42.8	42.7
Unknown	3.7	5.2	6.1	3.8	5.3	6.3	3.3	5.0	5.7
					Years				
Median age at doctorate	31.6	32.4	33.3	31.3	31.8	32.5	32.6	33.8	35.1
Median time lapse from baccalaureate to doctorate									
Total time	8.6	9.4	10.2	8.4	8.8	9.5	9.7	10.8	11.9
Registered time	6.0	6.4	6.8	5.9	6.2	6.6	6.1	6.7	7.2
					Percent				
Definite postdoctoral study	12.1	13.4	14.7	13.0	14.8	16.1	9.2	10.5	12.1
Seeking postdoctoral study	4.4	4.9	6.1	4.6	5.0	6.4	4.0	4.5	5.4
Definite employment	55.2	56.0	51.7	56.1	56.9	51.7	52.3	54.1	51.6
Seeking employment	21.3	19.5	19.6	19.7	17.2	17.6	26.5	24.4	23.3
Postdoctorate status unknown	7.0	6.3	8.0	6.7	6.2	8.2	8.0	6.5	7.6
Planned employment after doctorate*									
Education institution	51.6	44.3	41.3	49.3	41.3	38.4	59.2	51.0	47.0
Industry/business	8.7	14.2	14.2	10.2	16.6	16.4	3.8	9.0	10.1
Government	8.7	8.8	7.5	9.5	9.4	7.7	6.0	7.5	7.2
Nonprofit	3.9	4.7	4.7	3.8	4.3	4.2	4.0	5.4	5.8
Other	3.6	3.4	3.4	2.9	2.4	2.7	5.7	5.5	4.9
Primary employment activity after doctorate									
Research & development	20.8	26.2	27.5	23.2	31.3	33.3	12.0	14.7	16.4
Teaching	47.1	39.7	36.9	44.4	36.6	34.0	56.5	46.8	42.6
Administration	12.9	14.2	13.5	13.2	13.4	12.3	11.8	16.2	15.9
Professional service	9.3	12.1	12.8	8.9	10.9	10.7	10.6	15.0	16.8
Other	2.1	2.9	3.0	2.2	3.0	3.1	1.8	2.6	2.9
Activity unknown	7.9	4.8	6.3	8.1	4.9	6.7	7.2	4.7	5.5

--Not available.
*This adds to the total percent of those with definite employment and seeking employment.

Note: Percents may not add to 100 due to rounding. Data include one institution in Puerto Rico. Total numbers of recipients on this table are slightly less than the total number of awards on Table 1 primarily because of nonresponse to the Survey of Earned Doctorates.

SOURCE: U.S. Department of Education, Center for Education Statistics and the National Research Council, Survey of Earned Doctorates, 1976, 1981, and 1985.

Survey Methodology

This report is based on final data from two federal surveys. One is the the U.S. Department of Education's Degrees and Other Formal Awards Conferred survey, conducted annually by the Center for Education Statistics (CES) as part of the Higher Education General Information Survey (HEGIS). The second is the Survey of Earned Doctorates, conducted annually by the National Research Council.[14] Data from the Degrees and Other Formal Awards Conferred survey were used to describe the number of awards (total doctorates and education doctorates), while data from Survey of Earned Doctorates were used to describe characteristics of doctoral degree recipients and their fields of specialization.

Degrees and Other Formal Awards Conferred Survey

The Degrees and Other Formal Awards Conferred survey collects data on all degrees[15] conferred between July 1 and June 30 by the universe of accredited institutions of higher education in the 50 States and the District of Columbia, and U.S. territories. The survey form is filled out by institutional administrative personnel. The data are collected by sex of recipient and field of study, and by race/ethnicity (biennially since 1976). The total universe of institutions surveyed at all award levels was 3,379 in 1986. Each year between 1976 and 1986, institutional responses to this survey exceeded 95 percent. Imputations for nonresponse were based on the previous year's response for an institution. Data in the report from this survey are for institutions in the 50 States and D.C. only, excluding the one institution in Puerto Rico (which awarded three education doctorates in 1986). This survey collects data on education doctorates by almost 70 fields of study as listed in the Classification of Instructional Programs (CIP) developed by CES.

Survey of Earned Doctorates

The Survey of Earned Doctorates collects information on the universe of research doctorate recipients for the period July 1 to June 30. The survey is sent to all accredited doctoral-level institutions for distribution by the graduate deans to the doctoral recipients as they complete all requirements for their doctoral degrees. The survey collects demographic data, such as the student's sex, citizenship, and racial/ethnic group; educational history, including field of degrees; sources of graduate student support; employment status during the year preceding receipt of the doctorate; information concerning postgraduation plans; and background information on parents' education. Approximately 95 percent of the doctoral recipients complete and return the surveys. For nonrespondents, skeletal information on sex, field of study, institution, year of Ph.D. and other educational background data was

---

[14]The Survey of Earned Doctorates is funded jointly by five Federal agencies: the National Science Foundation, the U.S. Department of Education, the National Institutes of Health, the National Endowment for the Humanities, and the U.S. Department of Agriculture.

[15]The Earned Degrees and Other Formal Awards Conferred survey collects data at other award levels in addition to the doctoral award.

obtained from the universities' commencement bulletins. Imputations for other items were not done. Data in the report from this survey are for institutions in the 50 States, D.C., and Puerto Rico. This survey collects data on education doctorates by almost 40 fields of specialization that are a subset of the CIP fields used by CES.

For More Information

For more information on this report, please contact Elaine Kroe (202) 357-6361 or Susan Hill (202) 357-6593.

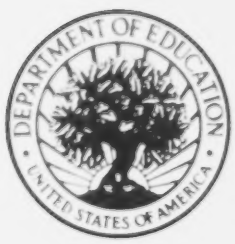
Complete data from the Degrees and Other Formal Awards Conferred survey are available on computer tape. For information on tape specification and cost, please contact:

U.S. Department of Education
Office of Educational Research and Improvement
Information Services
555 New Jersey Avenue, NW.
Washington, D.C. 20208-1325
Telephone: 1-800-424-1616

You many also use this address to place your name on a mailing list for announcements of future CES reports, or to request a copy of this report.

The National Research Council publishes data from the Survey of Earned Doctorates in annual Summary Reports. Special tabulations or computer tapes, within restrictions designed to protect the confidentiality of the respondents, are also available from the National Research Council. For further information, please contact:

Doctorate Records Project
Office of Scientific and
Engineering Personnel
National Research Council
2101 Constitution Avenue, NW.
Washington, D.C. 20418



CS 87-385